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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,516	03/27/2001	Yutaka Nagakura	NEC N00-1101	2816

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EXAMINER	
MOORE, KARLA A	
ART UNIT	**PAPER NUMBER**
1763	3

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/819,516	NAGAKURA, YUTAKA	
	Examiner	Art Unit	
	Karla Moore	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-19 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 27 March 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,164,012 to Hattori in view of U.S. Patent No. 5,505,385 to Gengler.

3. Hattori discloses the invention substantially as claimed.

4. Hattori discloses a gas treatment apparatus in Figure 1, comprising: an outer tube (11) having a gas inlet port (lower entrance portion of 17) connected to a gas supply system for receiving gas and a gas outlet port (21) connected to an exhaust pipe (20) and serving as a shell of a reactor forming a part of a chemical vapor deposition system, and defining an inner space; a wafer boat (15) provided in said inner space and holding plural wafers (14) spaced from one another in a predetermined direction; an inner tube (10) provided between said wafer boat and said outer tube and elongated in said predetermined direction; and a gas feeder (upper portion of 17 extending along the length of the apparatus) provided between said inner tube and said wafer boat, connected to said gas inlet port and defining a gas passage formed with gas outlet holes (19) equal in open area and spaced in said predetermined direction for blowing said gas to said wafers. In Figure 3, Hattori discloses a gas feeder (25) configuration with a convex outer surface and a concave inner surface and semi-cylindrical (i.e. generally crescent-shaped) side surfaces connected between side lines of said concave inner surface and side lines of said concave inner surface.

5. With respect to claims 3-5, the gas outlet holes are formed along an inner surface of the gas feeder facing the reaction area and lie along a virtual line extending from the bottom of said gas feed passage to the top of the gas feeder and parallel to a centerline of said wafer boat. Additionally, said outer convex surface and said inner convex surface are configured to be opposed to the inner surface of said outer tube and said wafer boat, respectively.

6. With respect to claim 6, as noted above, both end surfaces, of the gas feeder disclosed in Figure 3, are generally crescent shaped.

7. With respect to claim 9, Hattori teach the use of SiH_2Cl_2 as a reactant gas component used for depositing a material in said wafers.

8. However, Hattori fails to disclose a gas passage gradually reduced in area, in which said gas feeder has a narrow end surface and wide end surface.

9. Gengler teach tapering a flow device from a larger diameter at its open end to a smaller diameter at its other end to thereby assist in equalizing the pressure and the flow of gas along the extending length of the device (Figure 5; column 4, rows 16-25).

10. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a gas passage reduced in area, in which said gas feeder has a narrow end surface and a wide end surface in Hattori in order to equalize gas flow along the length of a device as taught by Gengler.

11. With respect to claims 8 and 12, the courts have ruled that expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex Parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969).

12. With respect to claim 11, the courts have ruled that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex Parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

13. Claims 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori and Gengler as applied to claims 1-12 above, and further in view of U.S. Patent No. 5,441,570 to Hwang et al.

14. Hattori and Gengler disclose the invention substantially as claimed and as described above.

15. However, Hattori and Gengler fail to teach the apparatus as an air-tight vessel.

16. Hwang et al. teach supplying and maintaining a vacuum, which necessarily implies the vessel is airtight, in a LPCVD process in order to deposit compound source gases on wafers (column 1, rows 20-24 and column 2, rows 25-31).

17. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an air-tight vessel in the prior art in order to deposit compound source gases on wafer using an LPCVD process as taught by Hwang.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km
August 26, 2002

Marian C Knode
MARIAN C. KNODE
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